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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/840,009

05/06/2004

Richard Ferrant

211.004-US

9632

7590

11/10/2004

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EXAMINER

DINH, SON T

ART UNIT

PAPER NUMBER

2824

DATE MAILED: 11/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/840,009

Applicant(s)

FERRANT ET AL.

Examiner

son t dinh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 10-14 is/are rejected.
- 7) ☒ Claim(s) 4-9 and 15-20 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 May 2004 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 8/13, 16, 19/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: East search history.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 11 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 11, the terminology "the first gate line" has no antecedent basis. Claim 11 should depend on claim 10 so as to provide a proper antecedent basis for this terminology.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3, 10-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Burnett et al (U.S Patent 6,714,436).

With respect to claim 1, Burnett et al disclose a memory device comprising a plurality of dynamic random access memory cells (411, 412, 421, 422, figure 4)

arranged in row and columns, each of the memory cell (see figure 1) including at least one transistor having a source region (14, figure 1), a drain region (15, figure 1), a body region (12, figure 1) disposed between the source region 14 and the drain region 15, a gate (13, figure 1) spaced apart from the body region 12, wherein each row of the memory cells includes an associated source line (SL in figure 4) which is connected to only the dynamic random access memory cells of the associated row. To be more specific, the memory cells 412 and 422 would be considered as one row, and the memory cells 411 and 421 would be considered as another row. Also, when different voltages are applied to the drain, the source and the gate (see figures 3, 6 and 7), the charge in the body region 12 (figure 3) would be changed, and different states (first and second states) are stored accordingly.

With respect to claim 2, figure 4 of Burnett et al clearly shows that each memory cell of each row (in the instant case, 411 and 421 is one row, and 412 and 422 is another row) includes a separate bit line (BL in figure 4).

With respect to claim 3, OV in figure 6 would be a control signal with first amplitude (applied to the control gate of the cell in the first row or selected row) $V_{dd}+V_{boost}$ in figure 6 would be a control signal with second amplitude (applied to the BL or drain of the cell in the first row or selected row).

With respect to claims 10 and 11, the gate of the memory cell 411 is connected to line 451 that would be considered as a first gate line.

With respect to claim 12, the applicant is referred to the rejection applied to claim 1 for the reasons of this rejection. Further, figure 4 of Burnett clearly shows that a

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different gate line (namely 451 is one gate and 452 is another gate line) for each memory cells in the associated row. In this instant case, 412 and 422 form a row, and gate line 451 is connected to one memory cell, and another gate line (452) is connected to another memory cells.

With respect to claim 13, the applicant is referred to the rejection applied to claim 2 for the reasons of this rejection.

With respect to claim 14, the applicant is referred to the rejection applied to claim 3 for the reasons of this rejection.

Allowable Subject Matter

Claims 4-9, 15-20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record fail to teach or suggest a memory device a source region, a drain region, a body region, and a gate, wherein five different voltage with different amplitudes applied to the source, the drain, the gate of the memory cells so as to store data as claimed in claims 4 and 15; and each of the memory cell of a first row of the memory cells shares a drain region with a memory cell in a second row of the memory cells, wherein the first and second rows of memory cells are adjacent rows as claimed in claims 9 and 20.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

-Geusic et al disclose a memory device having a source region, a drain region and a gate.

-Forbes et al disclose a memory device having a body region.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Son Dinh whose telephone number is 571-272-1868. The examiner can normally be reached on 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Elms can be reached on 571-272-1869. The fax phone number for the organization where this application or proceeding is assigned is 571-273-1868.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

S. Dinh

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November 6, 2004

A handwritten signature in black ink, appearing to read 'Son T. Dinh', with a stylized, cursive script.

Son T. Dinh
Primary Examiner